

fig. 1a
PRIOR ART

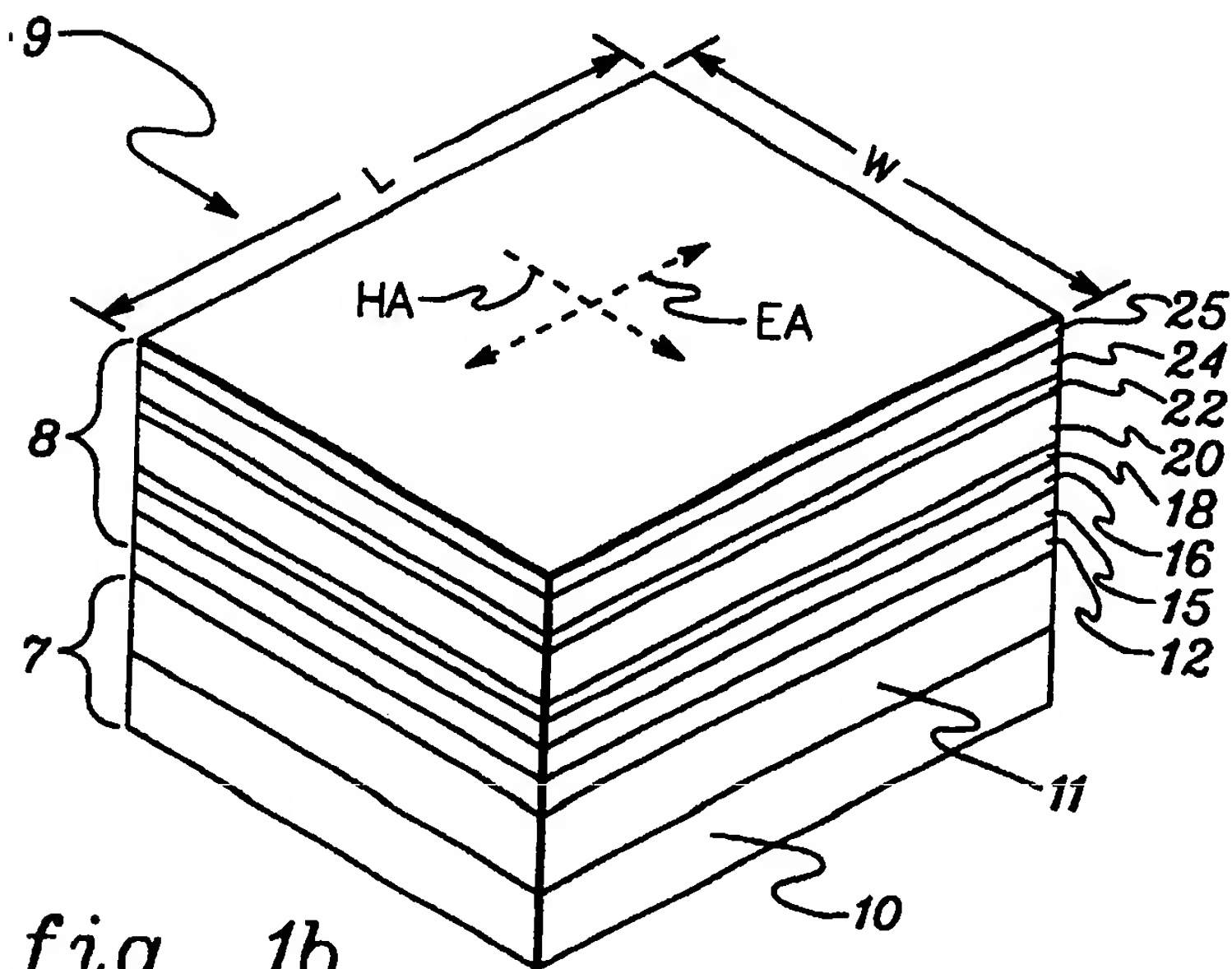


fig. 1b
PRIOR ART

FIG. 1c

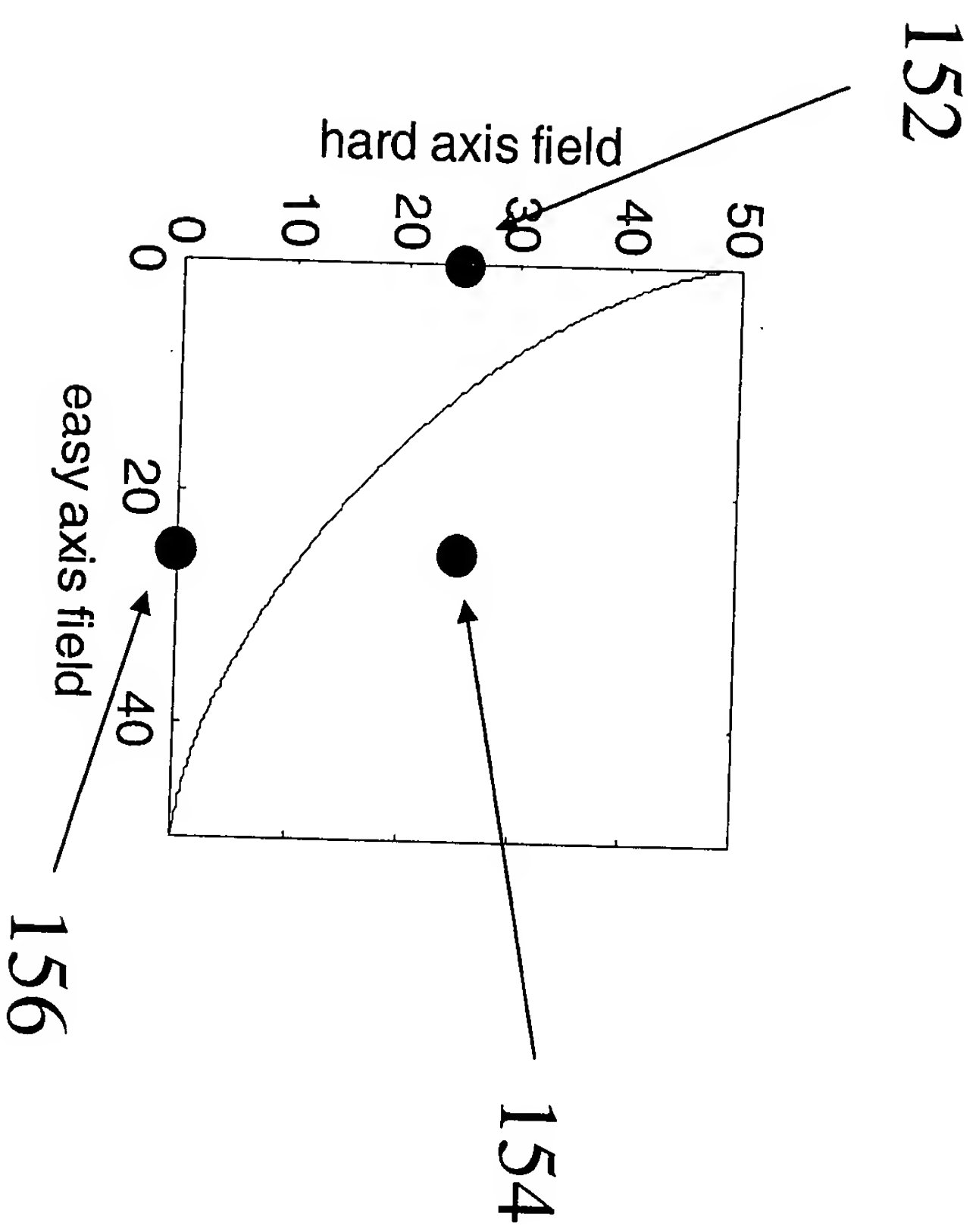
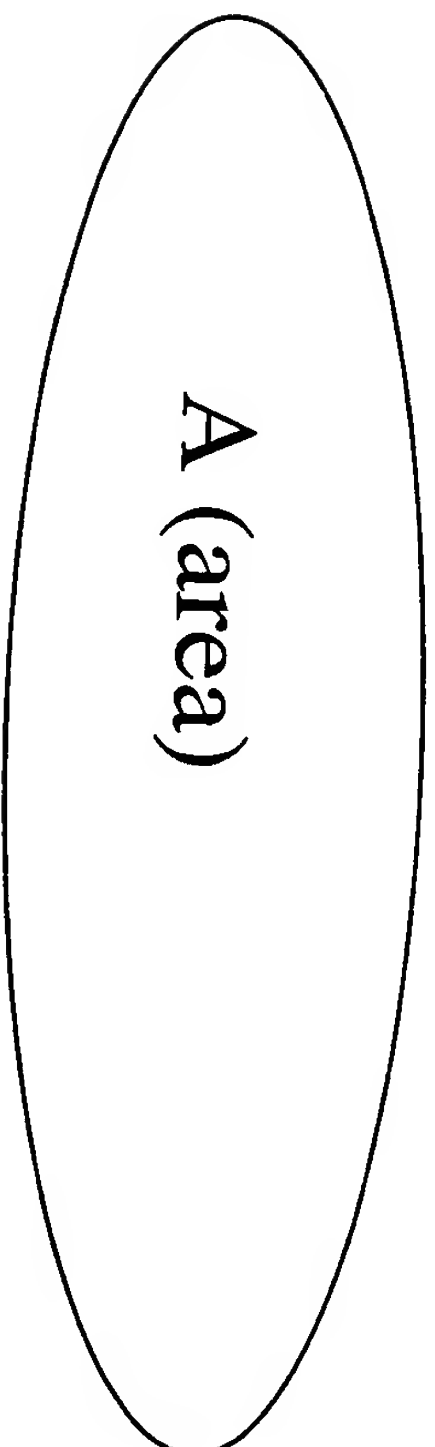


FIG. 2a

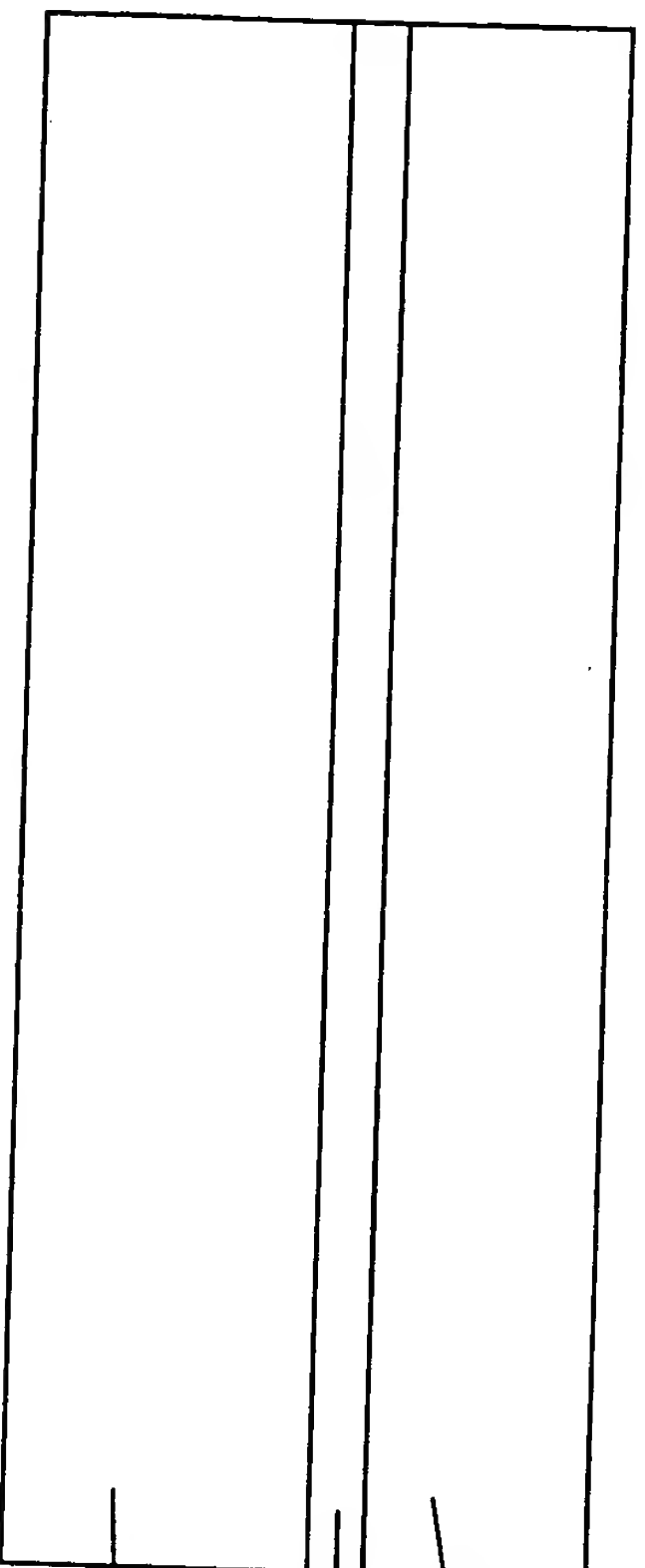
top view:



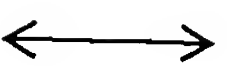
b (width of ellipse)

side view:

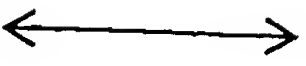
FIG. 2b



t_2

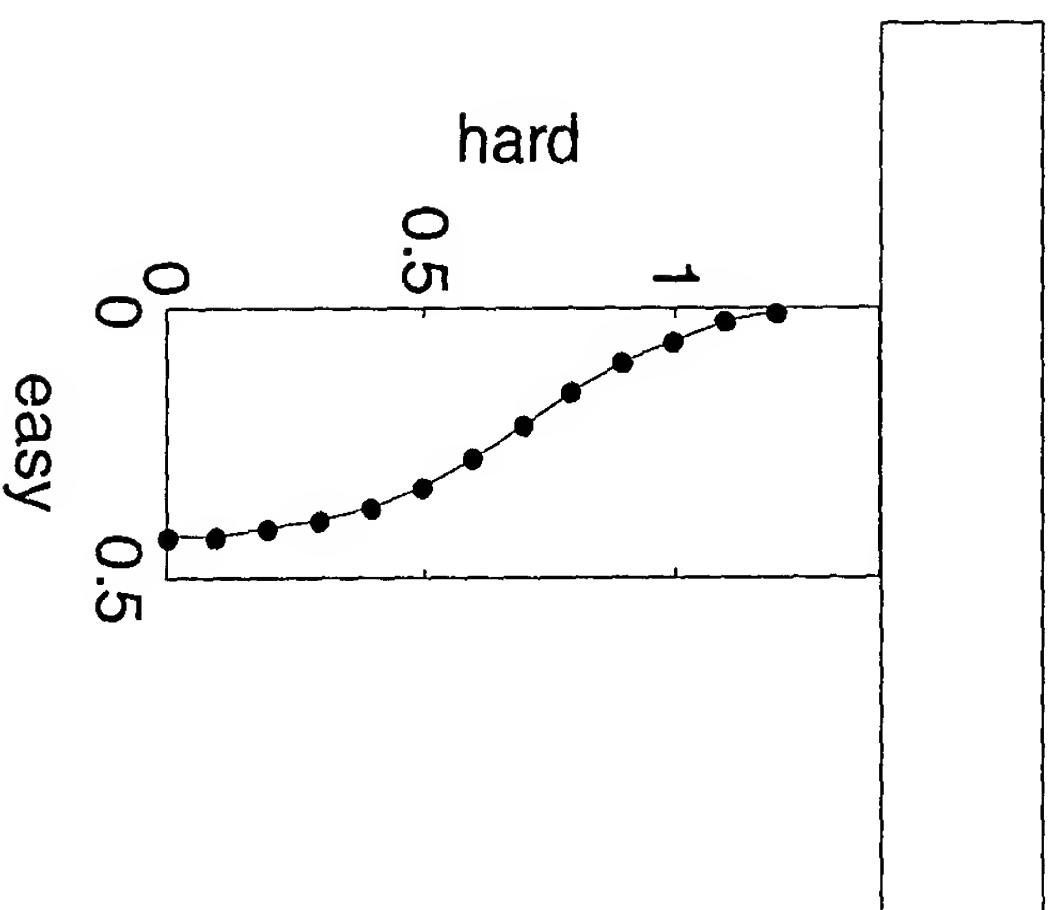


t_1



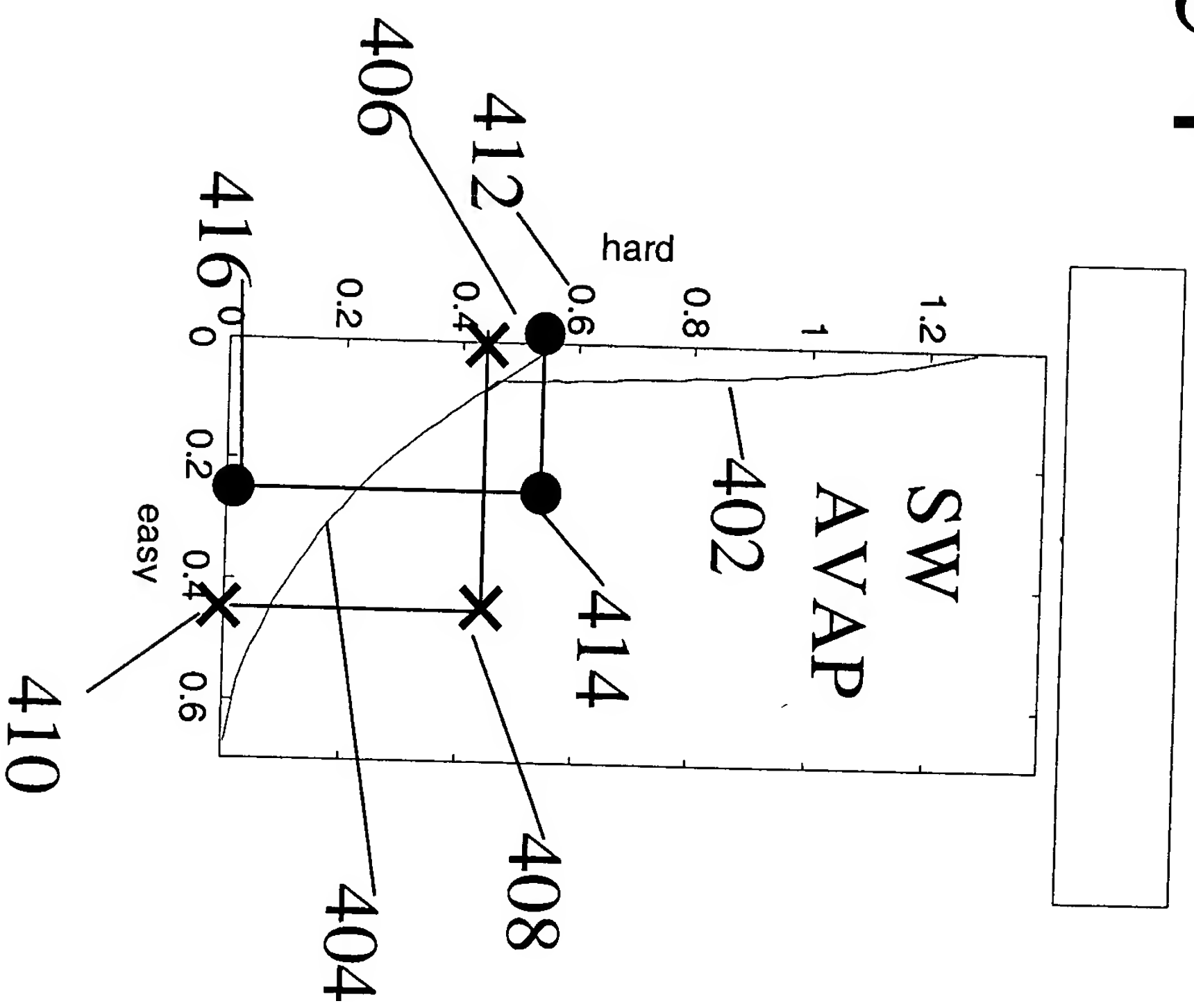
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Figure 3



via AP astroid for media ($t_1=t_2$)

Figure 4



$$z = t_1/t_2$$

Figure 5 Phase Diagram for Two Coupled Layers

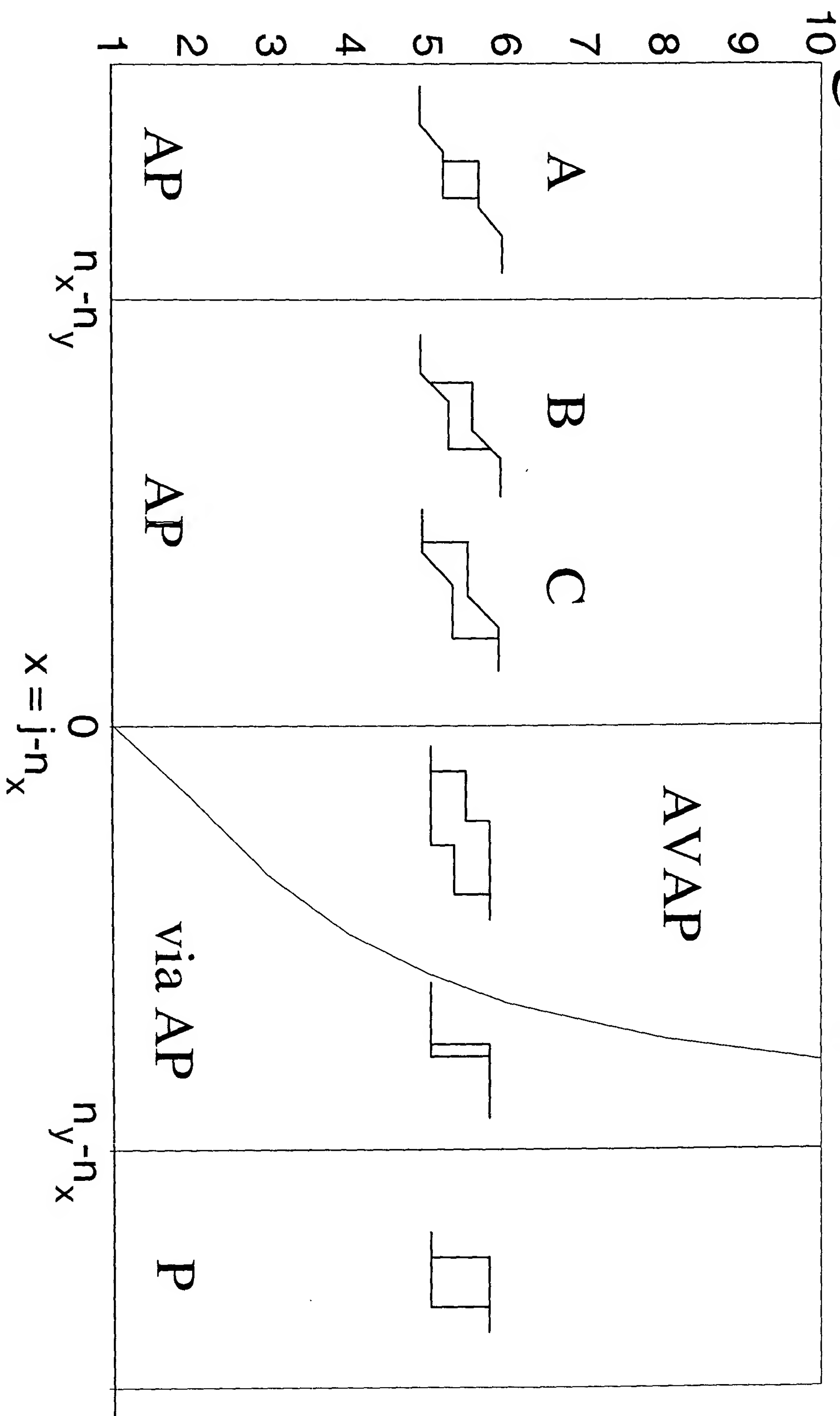
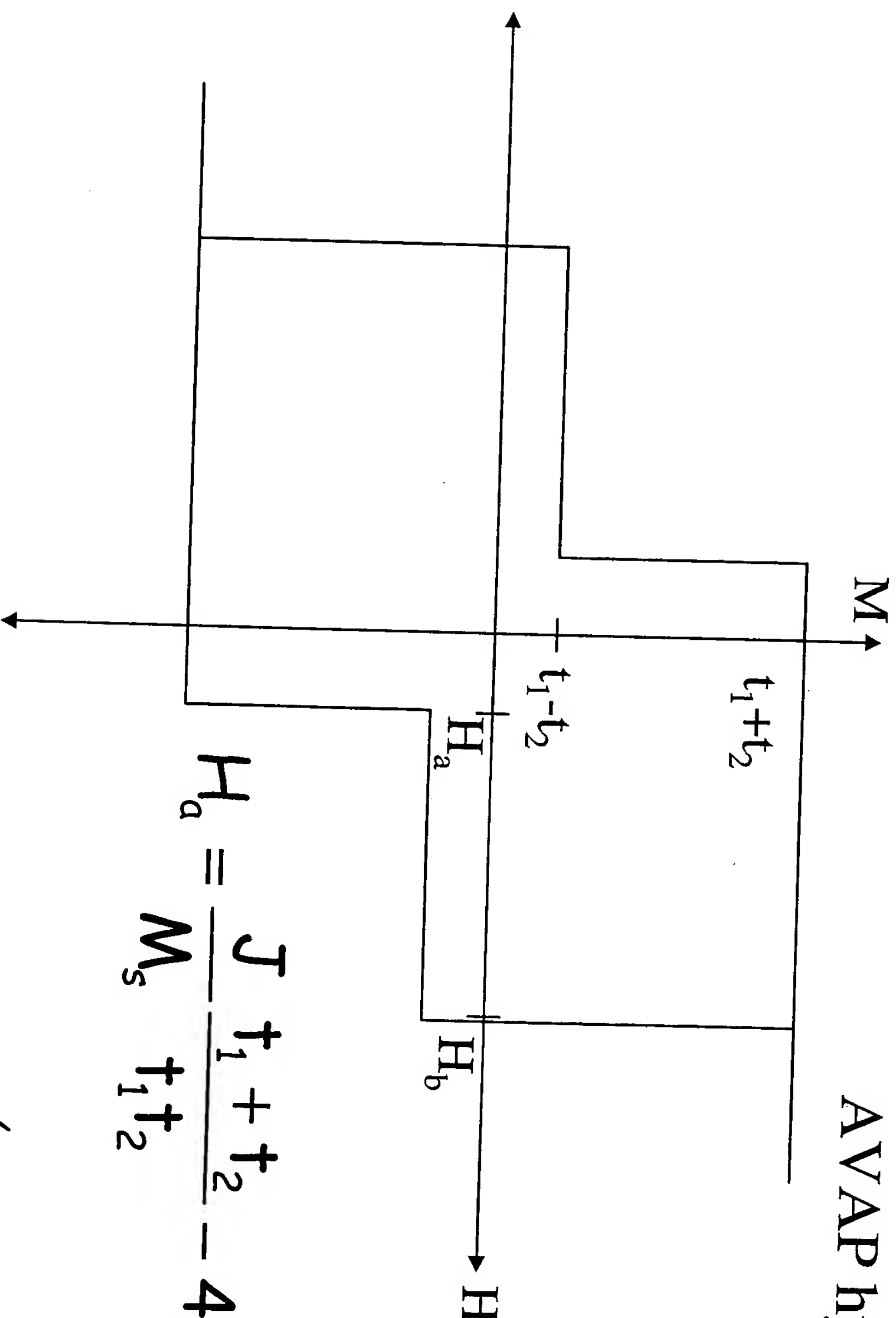


Figure 6

AVAP hysteresis loop

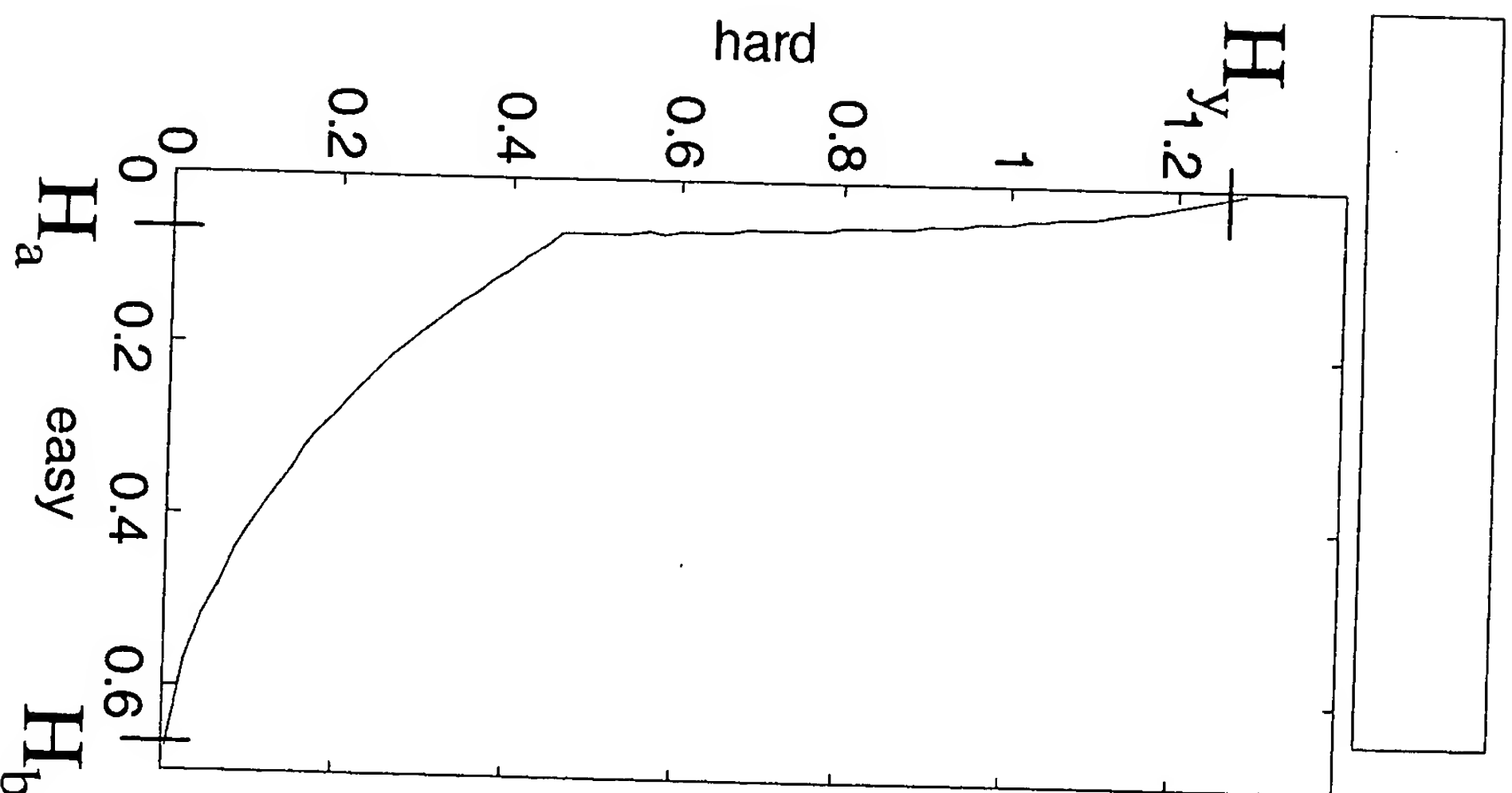


$$H_a = \frac{J}{M_s} \frac{t_1 + t_2}{t_1 t_2} - 4\pi M_s \frac{(t_1 + t_2)}{b} n_x$$

$$H_b = 4\pi M_s \frac{(t_1 - t_2)}{b} (n_y - n_x)$$

Figure 7

AVAP astroid



$$H_a = \frac{J}{M_s} \frac{t_1 + t_2}{t_1 t_2} - 4\pi M_s \frac{(t_1 + t_2)}{b} n_x$$

$$H_b = 4\pi M_s \frac{(t_1 - t_2)}{b} (n_y - n_x)$$

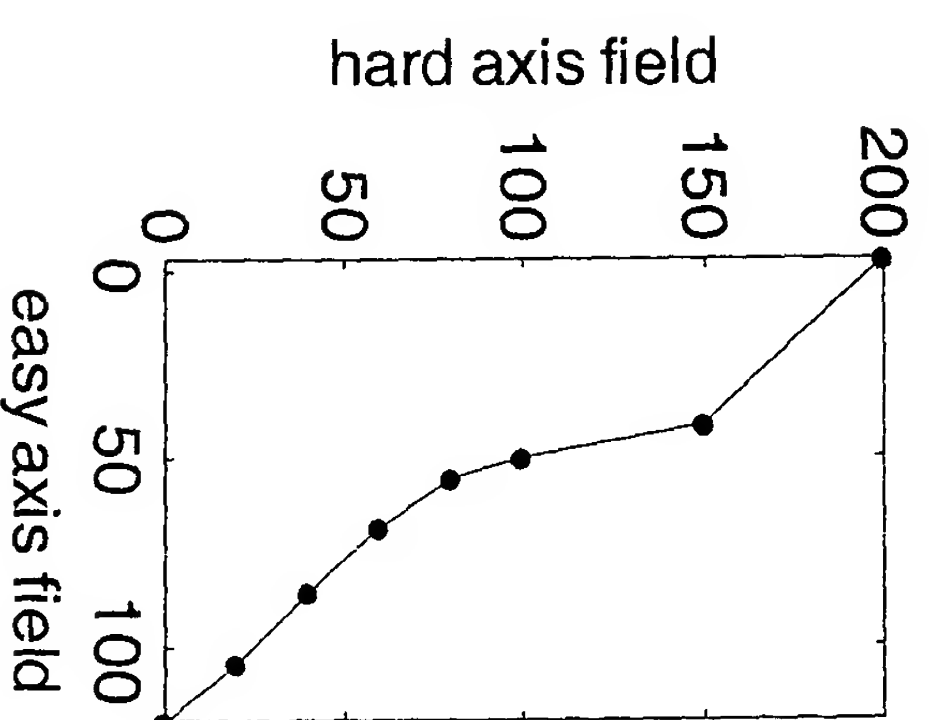
$$H_y = 4\pi M_s \frac{(t_1 + t_2)}{b} (n_y - n_x)$$

Experimental data



hysteresis loop

FIG. 8a



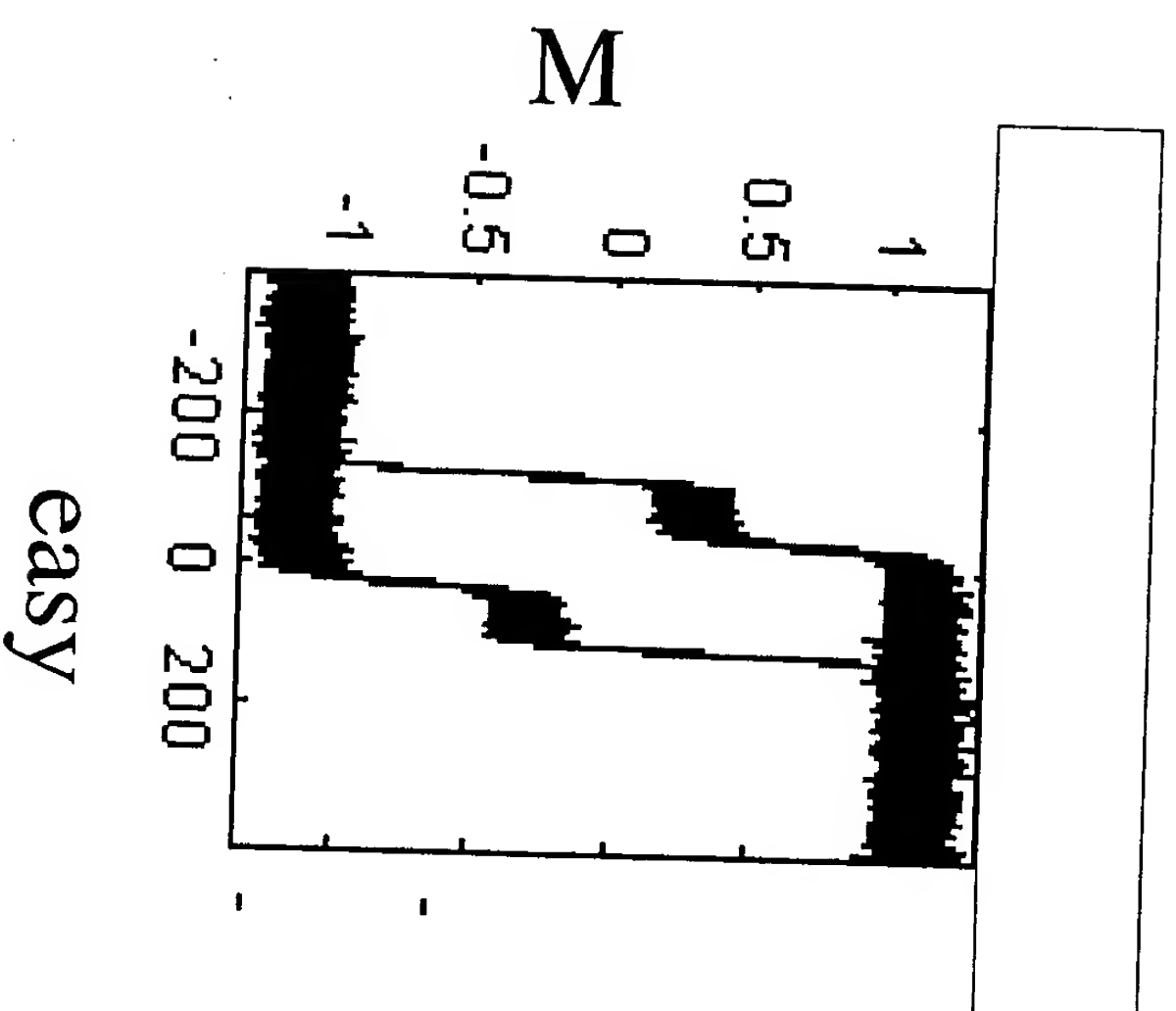
Astroid

FIG. 8b

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Figure 9

experimental data



hysteresis loop